

For a list of schools with accredited programs in interior design, contact:

☛ Foundation for Interior Design Education Research, 60 Monroe Center NW., Grand Rapids, MI 49503. Internet: <http://www.fider.org>

For information about careers in floral design, contact:

☛ Society of American Florists, 1601 Duke St., Alexandria, VA 22314.

Photographers and Camera Operators

(O*NET 34023A, 34023B, and 34026)

Significant Points

- A “good eye” with imagination and creativity are essential.
- Only the most skilled and talented who have good business sense maintain a long-term career.
- More than one-half of all photographers and camera operators is self-employed.

Nature of the Work

Photographers and camera operators produce images that paint a picture, tell a story, or record an event that will be remembered long after the event. Making commercial quality photographs and movies requires technical expertise and creativity. Producing a successful picture includes choosing and presenting a subject to achieve a particular effect and selecting equipment to accomplish the desired goal. For example, photographers and camera operators may enhance the subject's appearance with lighting or draw attention to a particular aspect of the subject by blurring the background.

Today, many cameras adjust settings like shutter speed and aperture automatically. They also let the photographer adjust these settings manually, thus allowing greater creative and technical control over the picture-taking process. In addition to automatic and manual cameras, photographers and camera operators use an array of film, lenses, and equipment—from filters, tripods, and flash attachments to specially constructed motorized vehicles and lighting equipment.

Photographers use either a traditional camera or a newer digital camera that electronically records images. A traditional camera records images on silver halide film that is developed into prints. Some photographers send their film to laboratories for processing. Color film requires expensive equipment and exacting conditions for correct processing and printing. (See the statement on photographic process workers elsewhere in the *Handbook*.) Other photographers, especially those who use black and white film or require special effects, prefer to develop and print their own photographs. Photographers who do their own film developing must have the technical skill to operate a fully equipped darkroom or the appropriate computer software to be able process prints digitally.

Recent advances in electronic technology now make it possible for the professional photographer to develop standard 35mm or other types of film, and use flatbed scanners and photofinishing laboratories to produce computer-readable, digital images from film. Once the film has been converted to a digital image, a photographer then can edit and electronically transmit the images, making it easier and faster to shoot, develop, and transmit regular film pictures from remote locations.

Although most photographers still use silver-halide film cameras, more are using digital cameras that use electronic memory rather than a film negative to record an image. The electronic image can be transmitted instantly via a computer modem and telephone line or otherwise downloaded onto a personal computer. Then, using the computer and specialized software, the photographer can manipulate and enhance the scanned or digital image to

create a desired effect. The images can be stored on compact disk (CD) the same way as music. Digital technology also allows the production of larger, more colorful, and more accurate prints or images for use in advertising, photographic art, and scientific research. Some photographers use this technology to create electronic portfolios, as well. Because much photography now involves the use of computer technology, photographers must have hands-on knowledge of computer editing software.

Most photographers specialize in portrait, commercial, or news photography. Others specialize in areas such as aerial, police, medical, or scientific photography, which typically requires additional knowledge in areas such as engineering, medicine, biology, or chemistry. A growing group of photographers are providing digital images directly for use on the Internet. Photography is also a fine art medium, and a small portion of photographers sell their photographs as artwork. In addition to technical proficiency, photographic art requires great emphasis on self-expression and creativity.

Portrait photographers take pictures of individuals or groups of people and often work in their own studios. Some specialize in weddings or school photographs. Portrait photographers who are business owners arrange for advertising, schedule appointments, set and adjust equipment, develop and retouch negatives, and mount and frame pictures. They also purchase supplies, keep records, bill customers, and may hire and train employees.

Commercial and industrial photographers take pictures of various subjects, such as buildings, models, merchandise, artifacts, and landscapes. These photographs are used in a variety of mediums, including books, reports, advertisements, and catalogs. Industrial photographers often take pictures of equipment, machinery, products, workers, and company officials. The pictures then are used for analyzing engineering projects, publicity, or as records of equipment development or deployment, such as placement of an offshore rig. Companies also use these photographs in publications, in reports to stockholders, or to advertise company products or services. This photography frequently is done on location.

News photographers, also called photojournalists, photograph newsworthy people; places; and sporting, political, and community events for newspapers, journals, magazines, or television. Some photojournalists are salaried staff; others work independently and are known as freelance photographers.

Self-employed photographers may license the use of their photographs through stock photo agencies. These agencies grant magazines and other customers the right to purchase the use of a photograph, and, in turn, pay the photographer on a commission basis. Stock photo agencies require an application from the photographer and a sizable portfolio. Once accepted, a large number of new submissions usually are required from a photographer each year. Photographers frequently have their photos placed on CD's for this purpose.

Camera operators use motion picture, television, or video cameras to film a wide range of subjects, including commercial motion pictures, documentaries, music videos, news events, and training sessions. Some film private ceremonies and special events. Like photographers, camera operators work in a variety of settings. Many video camera operators are employed by independent television stations, local affiliates, large cable and television networks, or smaller, independent production companies. *Studio camera operators* work in a broadcast studio and usually film their subjects from a fixed position. *News camera operators*, also called *electronic news gathering (ENG) operators*, work as part of a reporting team, following newsworthy events as they unfold. ENG operators may need to edit raw footage on the spot for relay to a television affiliate for broadcast.

Camera operators employed in the entertainment field use motion picture cameras to film movies, television programs, and commercials. Some specialize in filming cartoons or special effects for television and movies. *Television and movie studio camera operators* may be an integral part of the action, using cameras in any of



Photographers and camera operators produce images of an event that will be remembered long after the event itself.

several different camera mounts. For example, the camera operator can be stationary and shoot whatever passes in front of the lens, or the camera can be mounted on a track, with the camera operator responsible for shooting the scene from different angles or directions. Other camera operators sit on cranes and follow the action, while crane operators move them into position. *Steadicam operators* mount a harness and carry the camera on their shoulders to provide a more solid picture while they move about the action. Camera operators who work in the entertainment field often meet with directors, actors, and camera assistants to discuss ways of filming and improving scenes.

Working Conditions

Working conditions for photographers and camera operators vary considerably. Photographers and camera operators employed in government, television and commercial studios, and advertising agencies usually work a 5-day, 40-hour week. On the other hand, news photographers and ENG operators often work long, irregular hours and must be available to work on short notice. Camera operators working on a motion picture production also may work long, irregular hours.

Portrait photographers usually work in their own studios but also may travel to take photographs at the client's location, such as a school, a company office, or a private home. News and commercial photographers and ENG operators frequently travel locally, can stay overnight on assignments, or may travel to distant places for long periods of time. Camera operators filming television programs or motion pictures may travel to film on location.

Some photographers and camera operators work in uncomfortable, or even dangerous surroundings. This is especially true for photojournalists and ENG operators covering accidents, natural disasters, civil unrest, or military conflicts. Many photographers and camera operators must wait long hours in all kinds of weather for an event to take place and stand or walk for long periods while carrying heavy equipment. News photographers and ENG operators often work under severe time restrictions to meet deadlines.

Self-employment allows for greater autonomy, freedom of expression, and flexible scheduling. However, income can be uncertain

and necessitates a continuous, time-consuming, and sometimes stressful search for new clients. Some self-employed photographers hire an assistant solely for the purpose of seeking additional business.

Employment

Photographers and camera operators held about 161,000 jobs in 1998. More than one-half was self-employed, a much higher proportion than the average for all occupations. Some self-employed photographers contracted with advertising agencies, magazines, or others to do individual projects at a predetermined fee, while others operated portrait studios or provided photographs to stock photo agencies.

Most salaried photographers worked in portrait or commercial photography studios. Newspapers, magazines, advertising agencies, and government agencies employed most of the others. Most camera operators were employed in television broadcasting or at motion picture studios; relatively few were self-employed. Most photographers and camera operators worked in metropolitan areas.

Training, Other Qualifications, and Advancement

Employers usually seek applicants with a "good eye," imagination, and creativity, as well as a good technical understanding of photography or camera operation. Formal education may be a requirement for many positions. Entry-level positions in photojournalism, or in industrial, scientific, or technical photography, for example, are likely to require a college degree in journalism or photography, with additional courses in the specific field being photographed. Camera operators usually acquire their skills through formal post-secondary training at vocational schools, colleges, universities, photographic institutes, or through on-the-job training.

Both photographers and camera operators need good eyesight, artistic ability, and hand-eye coordination. They should be patient, accurate, and enjoy working with details. Photographers should be able to work alone or with others, as they frequently deal with clients, graphic designers, and advertising and publishing specialists. Camera operators also should have communication skills, and, if needed, the ability to hold a camera by hand for extended periods of time.

Commercial photographers must be imaginative and original. Portrait photographers need the ability to help people relax in front of the camera. Photojournalists not only must be good with a camera, but also must understand the story behind an event so their pictures match the story. They must be decisive in recognizing a potentially good photograph and act quickly to capture it.

Individuals interested in photography should subscribe to photographic newsletters and magazines, join camera clubs, and seek employment in camera stores or photo studios. Individuals also should decide on an area of interest and specialize in it. Summer or part-time work for a photographic studio, cable or television network, newspaper, or magazine is an excellent way to gain experience and eventual entry into this field. Some photographers enhance their technical expertise by attending seminars. Many universities, community and junior colleges, vocational-technical institutes, and private trade and technical schools offer photography courses. Basic courses in photography cover equipment, processes, and techniques. Bachelors degree programs, especially those including business courses, provide a well-rounded education. Art schools offer useful training in design and composition.

Photographers may start out as assistants to experienced photographers. Assistants learn to mix chemicals, develop film, print photographs, and the other skills necessary to run a portrait or commercial photography business. After several years of experience, magazine and news photographers may advance to photography or picture editor positions. Some photographers and camera operators become teachers and provide instruction in their own particular area of expertise at technical schools, film schools, or universities.

Camera operators in entry-level jobs, including cinematography assistants, learn to set up lights, cameras, and other equipment. They may receive routine assignments requiring camera adjustments or decisions on what subject matter to capture. With increased experience, they may advance to more demanding assignments. Camera operators in the film and television industries usually are hired for a project based on recommendations from individuals such as producers, directors of photography, and camera assistants from previous projects, or through interviews with the producer. ENG and studio camera operators who work for television affiliates usually start in small markets to gain experience. Advancement for them means moving to larger media markets. Other camera operators may become directors of photography for movie studios, advertising agencies, or television programs.

Photographers and camera operators who wish to operate their own businesses, or freelance, need business skills as well as talent. These individuals must know how to submit bids; write contracts; hire models, if needed; get permission to shoot on locations that normally are not open to the public; obtain releases to use photographs of people; price photographs; know about copyright protection for their work; and keep financial records. Freelance photographers also should develop an individual style of photography in order to differentiate themselves from the competition. Some photographers enter the field by submitting unsolicited photographs to magazines and art directors at advertising agencies.

Job Outlook

Keen competition is expected for photographer and camera operator job openings because they attract so many people. The number of individuals interested in positions such as commercial photographer, photojournalist, and movie camera operator, is usually much greater than the number of openings. Those who succeed in landing a salaried job or attracting enough work to earn a living by freelancing are likely to be the most creative, able to adapt to rapidly changing technologies, and adept at operating a business. Related work experience, job-related training, or some unique skill or talent—such as a background in computers or electronics—also are beneficial to prospective photographers or camera operators. Often, new job entry requirements emerge, because employers can pick and choose among the most qualified and the most experienced applicants. For example, most photojournalists enter the field with a degree in journalism and are held to the same ethical standards as reporters and journalists.

Employment of photographers is expected to increase more slowly than the average for all occupations through 2008. Declines in the newspaper industry over the next decade should reduce demand for photographers to provide still images for print. Demand for photographers in radio and television broadcasting is expected to increase relative to other occupations in the industry because digital photography allows photographers to cover events more quickly and from remote locations. However, the industry is growing very little, so employment gains for photographers will be modest. On the other hand, demand for photographers is growing in news and wire services operations, where photographers using digital equipment will be needed to transmit digital images interactively. Demand for portrait photographers also should increase as the population grows. And, as the number of electronic versions of magazines, journals, and newspapers grows on the Internet, photographers will be needed to provide digital images.

Employment of camera operators is expected to increase faster than the average for all occupations through 2008. The rapid expansion of the entertainment market, especially the cable and other pay television services, will spur the growth of camera operators. Modest growth also is expected in the motion picture production and distribution industry resulting, in part, from the increase in the number of feature films that will be produced over the next decade, but also because computer and Internet services provide

new outlets for interactive productions. Made-for-the-Internet broadcasts include live music videos, digital movies, sports, and general information or entertainment programming. These images can be delivered directly into the home either on compact discs or over the Internet through telephone lines.

Earnings

Median annual earnings of photographers in 1998 were \$20,940. The middle 50 percent earned between \$15,250 and \$30,820. The lowest 10 percent earned less than \$12,490 and the highest 10 percent earned more than \$43,860. Median annual earnings in the industries employing the largest number of photographers in 1997 were:

Radio and television broadcasting	\$27,400
Newspapers	24,100
Photographic studios, portrait	16,800

Median annual earnings for television, motion picture, and video camera operators were \$21,530 in 1998. The middle 50 percent earned between \$15,330 and \$34,200. The lowest 10 percent earned less than \$27,790 and the highest 10 percent earned more than \$53,470. Median annual earnings of television, motion picture, and video camera operators in the radio and television broadcasting industry in 1997 were \$17,000.

Most salaried photographers work full time and earn more than the majority of self-employed photographers, many of whom work part time, but some self-employed photographers also have high earnings. Many camera operators who work in film or video are freelancers; their earnings tend to fluctuate each year.

Unlike photojournalists and commercial photographers, few fine arts photographers are successful enough to support themselves solely through their art.

Related Occupations

Other jobs requiring visual arts talents include illustrators, designers, painters, sculptors, and photo editors.

Sources of Additional Information

Career information on photography is available from:

- ☛ Professional Photographers of America, Inc., 229 Peachtree St., NE, Suite 2200, Atlanta, GA 30303.
- ☛ Advertising Photographers of America, 7201 Melrose Ave., Los Angeles, CA 90046.

Visual Artists

(O*NET 34035A, 34035B, 34035C, 34035D, 34035E, 34038E, 39999E, and 39999H)

Significant Points

- Nearly 60 percent are self-employed—about six times the proportion in all professional occupations.
- Visual artists usually develop their skills through a bachelor's degree program or other postsecondary training in art or design.
- Keen competition is expected for both salaried jobs and freelance work, because many talented people are attracted to the glamorous and exciting image of the graphic and fine arts fields.

Nature of the Work

Visual artists create art to communicate ideas, thoughts, or feelings. They use a variety of methods—painting, sculpting, or illustration—